

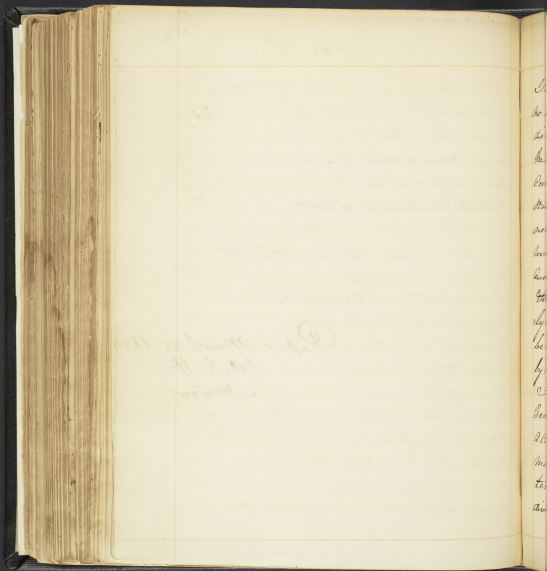
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An
Maugural Essay
On
Intermittent Fever
By
Casper Winter
Pennsylvania

Printed March 25 1824.
W. R. H.
Dean



Perhaps in the whole catalogue of human diseases no one has been more fully described or frequently discussed, than the Intermittent Fever.

In most parts of our Country it is one of the first Complaints attracting the attention of the Student, and continually presenting to the notice of almost every Practitioner, Yet notwithstanding its frequency of occurrence, and our intimacy with its symptoms and treatment, the exact nature of its Causes has never been fully understood, I say Causes for I think it will be readily admitted that it may be produced by more than one Cause.

From time immemorial Intermittent Fever has been considered as depending nearly altogether for its existence on Miasmata or Marsh Effluvia. I think this idea will not be tenable by any one, who will consider the diversity of Climate and Circumstance and

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under which this disease has appeared among us for the last three years, and during seasons of so totally different & diversified a nature. That Marsh effluvia may produce this Complaint I make no doubt. May I believe whenever this effluvia abounds, it will to a certainty create more or less of it. At the same time it appears impossible to attribute all the Intermittent we have had for the last few years to Marsh Miasmata. In fact I have known its prevalence in such situations, where no one could believe it possible noxious effluvia could be its Cause, and where parties within the last three years, it has been wholly unknown for thirty years past. I allude particularly to that fine tract of Country ranging from the Cherry Hill on the west to the Delaware on the East. Commencing at the Pence-
pack and stretching North & East through the County of Bucks. this Range is perhaps as fine and salubrious as any part of our Country, the

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Streams are for the most part bold and rapid in their
 Course, Confined to their Channels, steep and precipitous
 banks, forming but little or no meadow or marshy
 ground, not sufficient to generate enough effluvia
 to injure the Country to any extent, Over much of
 this tract I have travelled "on foot" and was im-
 pressed to consider it as one of the strong and almost
 inaccessible fortresses of Health. Yet than this, few
 parts of our Country suffered more from the Inter-
 mittent. I am also acquainted with some parts
 which have long been noted for the prevalence of this
 Complaint, which escaped nearly altogether during
 the general invasion last Summer, Salem N. J.
 is a remarkable instance of this nature, the last
 season when the disease was ravaging every other part
 of the State Salem hitherto the very victim of "fever &
 ague," experienced almost an entire exemption.

This is more extraordinary viewing the situation of
 this little town surrounded as it is by extensive marshes.

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meadows and ponds of stagnant water. Suppres-
 sing this location during the last summer. It ap-
 peared to me if Miasmata could claim indisputable
 sovereignty over any place upon earth, surely here
 was the spot. Yet as above stated Salem remained
 almost free from the scourge.

Another Circumstance has forcibly presented to my
 mind opposing the idea of unity in the Cause of
 hot & Remittent fever. viz, the remarkable difference
 of the Summers of 22 and 23. The Summer and first
 autumn months of 22 were extraordinary for their
 great heat & dryness so much in places the danger
 to our domestic animals seemed really immin-
 ent from the scarcity of pasturage and the con-
 tamination of the waters (the preceding summer also
 was of this kind tho' not so uniformly hot and
 dry) in this then the Summer of 22 the Inter and
 Remittent fever (for they were much alike both of a
 bilious nature and frequently running into each

Other) prevailed to a great degree the Western and Middle States. The summer of 22 was the exact Counterpart of the two preceding - uncommonly mild and pleasant in temperature, at no over time was the heat or dryness of sufficient duration to injure the herbage or affect the Springs. Yet behold under every diversity - the very same Epidemic raging through the same territories, possessing the same attributes, and stamped by the same Characteristics. There was this difference however - It commenced for the most part a month earlier rather more highly bilious and thick when once it laid hold on a patient it was rather more tenacious - not more obstinate or difficult of Cure but more apt to recur when cured.

It may be said by some that the difference of the seasons of 22 and 23 operating in a different way would ultimately produce precisely the same effect of the marshes and low grounds enabling them to engender the same quantum of deleterious effluvia.

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Better as it may, it will hold good only as regards
 Moist Situations, but will not account for the high
 and dry inland Districts, being equally affected by
 the disease in Seasons so very dissimilar. for
 tho' there can be no doubt that the Exhalation
 from the Earths surface will be greater in moist
 Seasons, yet the difference will not be so great as we
 would a priori suppose. for it has been proved by
 positive Experiment that when the immediate
 surface is apparently free from moisture, great ex-
 halations are admitted from the depths of the Earth,
 the quantity has been Calculated and has been
 Reported by Chemner in his work on Botany to
 be 5000 gallons from an acre in 24 hours, on an
 average throughout the year.

I cannot agree with those who Consider this exha-
 lation from the Earth as so injurious to the human
 Constitution. it is unceasing and natural to every
 habit we would be able to resist it. again were this

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a Cause of fever we should in Every Situation be Continually destroyed by its effects, seeing that it is in Continual operation in every place where the Surface is not frozen -

It might be Considered as I object to these as the Causes of this Complaint, that I should state what are the true Causes, this indeed would be as little as could be expected. little as it is however I shall wave it for the present. for as yet I have never been able to satisfy my^{self} on this point. I will only say when the Intermittent fever exists in the Epidemic form as it has done for the last three years, it seems probable that it depends on some distemperature of the atmosphere, but the Cause of such distemperature, its Nature or exact Modus Operandi on the System, I Confess myself wholly ignorant. The theory of Animalcules is only plausible because we know so little of them whether they really exist or not, that we are disabled from dispro-

disproving it, by any positive facts, and indeed this appears pretty much the amount of all we can say on the vague and uncertain theory of distemperatures of the air as a Cause of this fever. Some have supposed all Epidemics to depend on Causes of this Nature. this is making the atmospheric air subject to very many and diversified distemperatures. and yet we know the most accurate Chemists have never been able to discover these Changes by their ingenious experiments. On this subject I could wish to enlarge but being altogether speculative, it would occupy more time than in propriety could be allowed in a paper of this Nature.

Let the Cause of Intermittent Fever be what it may I am utterly at a loss to say in what manner the peculiar features of the disease are induced acting in the first instance on that prime Mover, and Centre of Vitality the Stomach - to whose myster

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mysterious guidance every part of the system appears to observe the most severe Obedience, the Malicious actions here induced are by the mystic power of sympathy conveyed throughout the whole system. but how or in what precise manner all this is done. how a chill and then a fever and these recurring at certain and defined intervals of time, I believe has never been intelligibly explained. How will this be done with our present stock of physiological knowledge. It has been asserted that exposure to cold, particularly when combined with moisture is one source of this complaint. I am disposed however to think that this is a very rare cause else we should meet with it often in high latitudes and also in the middle of winter. On the contrary it is a complaint almost peculiar to warm climates and to the warmer seasons of the year!

It is fortunate for us that the treatment of Intermittent fever is far better understood

than the nature and *Modus Operandi* of its Causes.

In pursuing my Remarks On Intermittent fever. It might here be thought incumbent On me, to give a regular and succinct account of its Causals as well as the various treatment which it has met with in different periods of its history. this however I do not Contemplate.

I shall confine myself to the symptoms progress and terminations of the disease.

By chronological Writers numerous divisions and sub-divisions have been made of Int^r fever, which are abundantly too nice for any purposes of practical utility. thus we have the quotidian, tertian, Quartan the double tertian the double quartan &c the triple tertian triple quartan &c and some have extended the term to a much wider period thus the hebdomadals the menstruales, bimenstruales, and even yearly (annual) On these statements no one can now place much reliance.

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So if such ever did occur it must have been casual and to be accounted for only on the doctrine of Chance. It certainly does happen that from some cause or other these primary forms of Intermittent vary very much in kind as to assume the appearance of one or other of the above mentioned forms. But whenever the recurrence of the paroxysm becomes so irregular they have been called *cratica* under which general title should be included all these varieties.

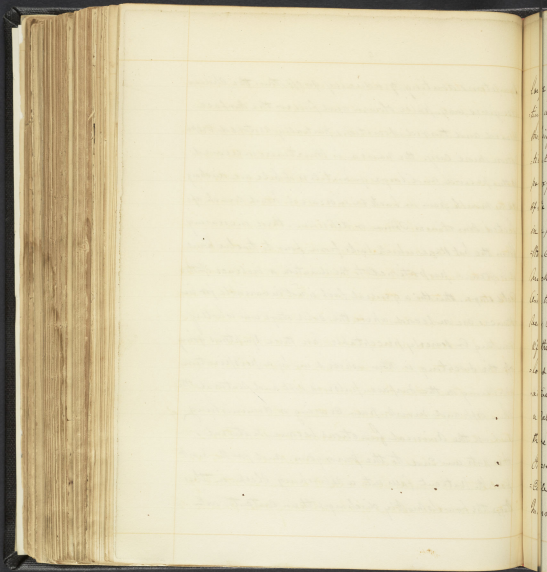
The only legitimate forms then are the Quotidian, Tertian, and the Quartan, it was the opinion of the celebrated Sydenham that the tertian was the only primary form, all others being merely varieties of this. Of these three forms the tertian is said to appear most frequently then quotidian lastly the quartan which is rare.

It has been said moreover the quotidian mostly makes its appearance in the morning the tertian at noon and the quartan in the evening.

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Under whatsoever form an Intermittent may make its appearance, the general symptoms are similar, and are such as attend upon the three stages into which a paroxysm may be resolved viz, the hot Cold and sweating stage. It would be superfluous minutely to describe these symptoms, for connection's sake I will hastily sketch them. The Cold stage is generally preceded by a sense of weariness of and oppression of both mind and body. the pulse is rather weaker than natural, with a dull obtuse pain in the head back and loins. Chilliness now seizes the patient. the surface becomes shrunken pale, and rough, imparting the sensation of cold when the hand is applied, these increasing, the pulse becomes weaker and quicker with more or less difficulty of Respiration, nausea or vomiting with torpidity of mind, all the animal functions impeded secretion and excretion stopped, for much according to this state of things continues for two three or four hours sometimes a shorter period. than some of these symp

Symptoms abating, gradually go off, thus the Chills
 cease, gives way, pulse flows and fuller the Surface
 relaxed and turgid, secretions partially restored, Respi-
 ration more easy, the heat is sometimes increased
 at this period and large quantities of bile are disch-
 arged by mouth, pain in back &c increased head much af-
 fected sometimes Coma or Delirium, these increasing
 from the hot stage, which lasts from four to twelve hours
 is often a proportioned to the duration or violence of the
 Cold stage, this tho a general fact is not invariable for in-
 stances are on record where the cold stage was wholly
 wanting or scarcely perceptible, as these symptoms going
 off the sweating is now ushered in by a perspiration
 appearing on the surface, pulse is soft and natural the
 skin soft and moist, pain ceasing or diminishing,
 and all the Animal functions become natural,
 this puts an End to the paroxysm, and for the most
 part the Patient falls into a refreshing Sleep, in this
 Stage the bowels mostly discharge their contents, with



large quantities of bile, the urine is also plentiful, depositing a lactitious sediment, these then are the most striking symptoms constituting a paroxysm, and the patient now remains as well as usual until the next paroxysm, which is sooner or later according to the type of the disease - As now described are the appearances in a plain case of Intermittent Fever - But in many instances we meet with others which would tend very much to harass the Practitioner were he unacquainted with their nature, these anomalous symptoms were very common during the wide spread prevalence of the Epidemic of our last summer, these anomalous symptoms may be either of a positive or negative nature thus an Intermittent might exist without a cold a hot or a sweating stage, the absence of one of these stages would form a negative symptom - These anomalies are very diversified and to describe them would be to add to a regular attack of Intermittent symptoms of almost every other known di-

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disease or diversified are they -

When this fever is epidemic nothing is more common than for it to be complicated with, or at least for it to take on the form of, the disease which may be then prevalent, hence we have it associated with dysentery, diarrhoea, hepatitis &c. during the late season a case of Intermittent fever under my notice attended by complete loss of vision.

The patient an elderly lady of very delicate constitution, attacked with obvious ^{intermittent} fever, twelve hours from her first attack her sight was totally gone. At this time there was no appearance of nausea - in preference then to disturbing this organ by an Emetic, I waited the operation of Calomel \mathfrak{xxij} which I had previously administered in less than an hour from its loss her vision was restored I attributed this to the operation of the Calomel purging the bile from the stomach to the intestines thus relieving the stomach.

What was singular in this instance the patient

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never experienced a complete cold stage. the attack from the commencement assuming a low form associated with periods of great exhaustion, & much stimulation. were resorted to every half hour, this I thought proceeded from the narcotic impressions made on the stomach by the bile and thence extended to the whole nervous system - for tho' the stomach did not appear much affected in the first instance a long time elapsed before its wonted capacity for digesting accustomed food was restored -

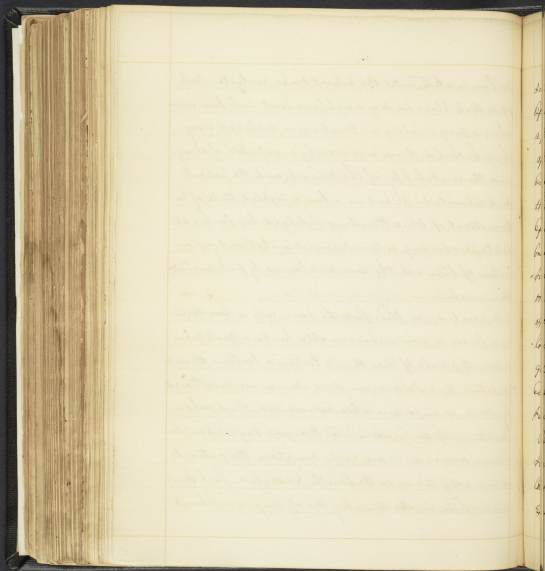
Here it may not be amiss to say a word or two on the Prognosis and diagnosis of the Complaint -

In the commencement if the procyon be severe and of long duration - the prognosis that and in complete it will be unfavorable for the strength of the patient. great irritability of stomach particularly if it leads to inflammation of that viscus is unfavorable, this sometimes happens and the patient is utterly unable to retain any active medicines. and the irritation and

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inflammation^{from} until the patient sinks prostrate such a case took place in my sick low road last term when a very intelligent Practitioner declared every thing he could devise was utterly incapable of allaying the irritability of the stomach, and the patient sunk exhausted - He had in a low enfeebled state of the stomach of some standing indulged too far his appetite, producing as was supposed irritation inflammation of stomach, the never ascertained by post mortem examination -

A disposition in this fever to run into a low continued form is also unfavourable hence a quotidian is more difficult of cure than a tertian a tertian than a quartan - Delirium and Coma are ascertained by some as unfavourable occurrences. Lind when speaking of the Epidemic of Bengal says, when delirium occurred as an early symptom the patients generally died in the fourth paroxysm. Last term men while in the Country one of my neighbours



sent for me, I found him labouring under an attack of irregular intermittent. when I saw him he had a full tho not a tense pulse, about fifty five, a mild affrighted appearance, and slight delirium. I at once took from his arm eight or ten ounces of blood, this relieved him immediately. he was on the use of astringents for what he called a dysentery. which on inspection proved a diarrhoea the discharges consisting chiefly of bile tinged with blood. presuming this a natural effort of the system to rid itself of the offending cause I cut off the astringent articles, allowed the bile to purge him thoroughly, and he soon got entirely well. here there was delirium from the very outset of the attack and yet a milder case I never saw. The favourable Omens are the reverse of the above. Of the diagnosis of this complaint nothing need be said there is but one disease with which it can be at all confounded viz hectic fever, indeed there is no similarity existing between the two, having each is preceded by a

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Chills followed by a fever breaking &c. Intermittent fever attacking a previously weak or debilitated Constitution may be considered unfavourable. However these are some exceptions - for it has happened that Malaria and Phthisis have been cured or much relieved in this way - As above described then after the Complaint has fairly set in it will bear a longer or shorter Course depending on the practice instituted -

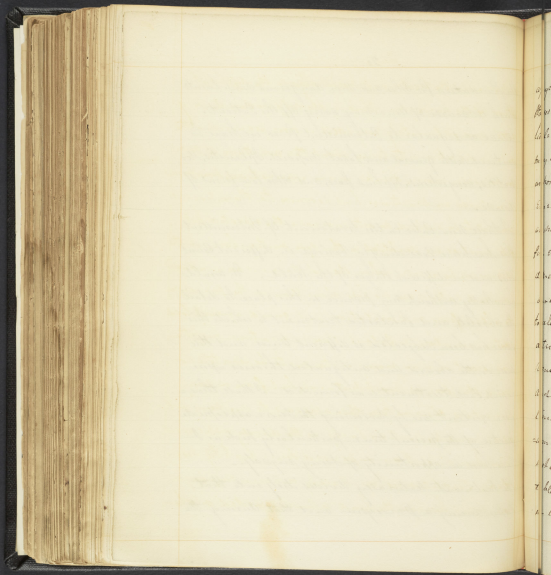
If the vitality of the Constitution has not been previously impaired, in a great majority of cases this Complaint will terminate happily, it will however sometimes happen in opposition to the best advised plan of treatment and the most assiduous endeavours that some of these Cases will prove very obstinate and unyielding continuing for a great length of time in an irregular manner, gradually wearing down, and undermining the strength of the patient, and even when finally relieved it will be found to have laid

the foundation for other and more dangerous complaints which in course of time may carry off the Patient.

Hence as sequelae to Intermittent fever we have to contend with general and local Dropsies, Splenitis, Hepatitis, Congestions, Typhus fevers, and other low forms of disease.

I shall now enter on the treatment of Intermittent this has been exceedingly various in different Countries and in different stages of the World. It would be wholly without my province in this place to detail the obsolete and fantastic treatment to which this fever has been subjected at different times and the more so the absurd and antiquated theories upon which such treatment was founded. I shall therefore content me by reviewing the more appropriate practice of the present time - particularly such as I have had an opportunity of seeing myself.

The treatment rather ally divides itself into that proper during a Paroxysm and that during the



apyrexia. the treatment varies also in the different
 stages of the pyrexia. Thus in the cold we can do very
 little and fortunately very little is here required. The
 only indication is to bring about the hot stage as soon
 as possible. warm drinks, warm applications, sinapisms,
 emetics in some cases had recourse to, these means
 are not to be pushed so as to increase the expected hot
 fit. emetics are doubtful in this case particularly if the
 depression be great. When the hot stage has been induced
 our indications are no less plain than in the former viz
 to allay fever and irritation and guard against local
 determination. to fulfil these indications first then
 venesection is in many instances to be resorted to
 and this seems most naturally from a very
 limited observation this appears to me very sel-
 dom requisite particularly as the disease abated
 last summer. I am informed some highly Respe-
 table Practitioners very rarely or never employ it
 when however the head is much affected or when

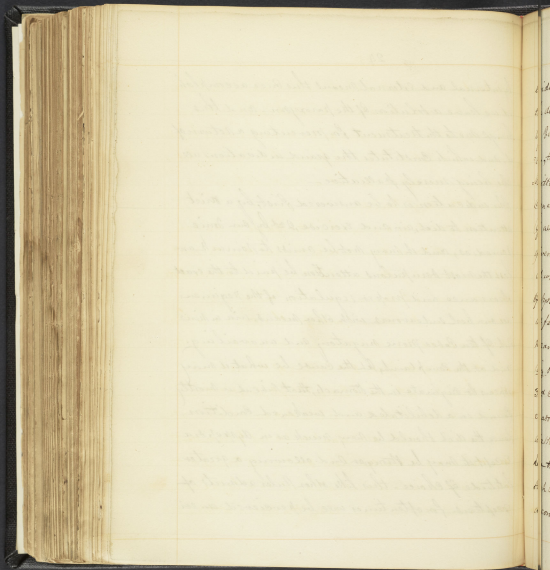
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local determinations threaten the lancet must not be neglected. On the contrary it here stands preeminent among our Remedial Resources. To relieve irritation and calm excitement and Emetic may follow the bleeding this has been the established mode of commencing the treatment of Intermittent for a long time - active purges not only relieve the stomach and bowels of their irritating contents, but also detract from the circulating mass of fluids. Various Cooling Diaphoretics are now also resorted to - I do not know whether or I got the idea from Boerhaave or Reflection - but it has often appeared to me when walking the wards of our Hospitals and seeing patients at the same time under the effects of purgative medicines. also taking various Diaphoretic articles and observing the difficulty of producing purgation as well as perspiration under such circumstances - that this plan must certainly be erroneous. for it is more generally admitted that most of our Remedies act by a stimulating

Operation directly or indirectly. It is moreover said that two operations of dissimilar nature cannot go on in one and the same system at one and the same time without interfering, if this be true this practice rests on sound physiological views - It is stated some where, and apparently with some force, that the exhibition of purgatives during the hot stage, at least is of doubtful efficacy by tending to increase the heat and irritation - a priori this appears Rational I however have never witnessed these ill effects - admitting it to be the case, we are in a greater dilemma than ever, what are we to do? It certainly would be productive of more injury and irritation to allow the noxious contents of the stomach and bowels to remain until a solution of the fever, than to risk the consequent irritation of a purge - Again in continued fever and other diseases we do not experience their ill effects, and if we did we could not omit them - the first passages being cleared we endeavour to bring about a perspiration

by internal and external means this once accomplished we have a solution of the paroxysm - and this brings into the treatment for preventing a return of it, and which constitutes the grand indications are also being merely palliative -

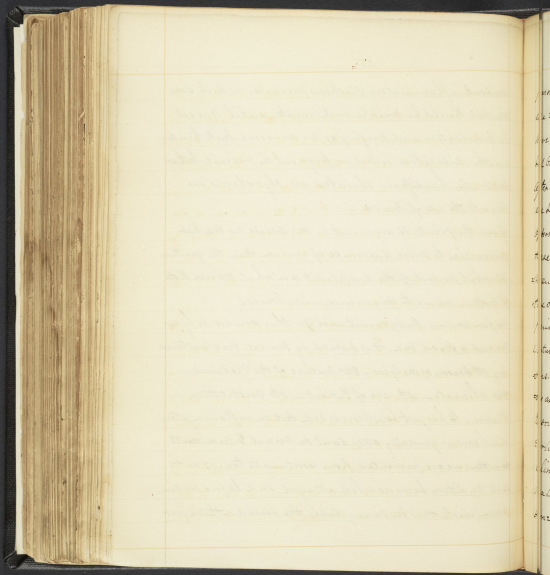
This indication is to be answered first, by a strict attention to diet, air and exercise, and by our tonic remedies, and it may not be amiss to remark and less the most scrupulous attention be paid to the exact observance and proper regulation of the regimen, let our best endeavours with other means, viz in nine out of ten Cases prove nugatory and unavailing. and as the complaint, let the cause be what it may appears to originate in the stomach, that indeed is mostly found in a debilitated and weakened condition. Hence the diet should be very much as in dyspepsia & as it may be stronger and allowing a greater latitude of choice - this like other rules admits of exceptions for often times will be perceived an sei



Obvious inflammatory diathesis prevails, in such case the diet should be simple and weak, until aided by bloodletting and purging, &c we overcome such tendency, this disposition is not infrequent in Periodic Intermittents. Having now obviated all objections we come to the use of Quina.

Of all the points of argument in this disease no one has given rise to more difference of opinion than the question at what period of the complaint or in what precise state of system are we to commence with Quina?

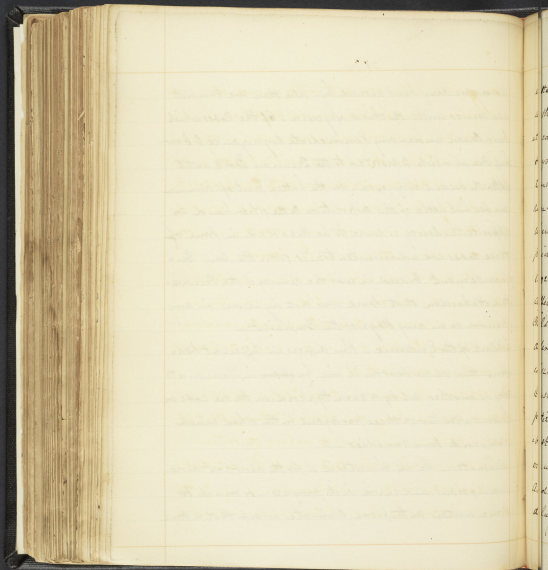
As far as my judgement will go this period is by no means a fixed one, it is varied by several circumstances viz 1st Season of the Year - 2nd Nature of the Epidemic - 3rd Climate - 4th Age of Patient - 5th Constitution - 6th Reason. It has just been remarked that an inflammatory diathesis is generally attendant on Periodic Intermittents & here then we are prevented from resorting to tonics until such condition be more or less allayed and before we can accomplish this in many cases the second or third par



paroxysm may have passed by - Here then we cannot use tonics until the third apyrexia - Of the Cases which have fallen under my immediate cognizance I have but one in which I resorted to the Peruvian Bark until after the second apyrexia - In the latter part of summer we see but little of this disposition on the other hand an opposite tendency is more to be dreaded in some of these Cases we administer tonics from the very commencement. Indeed it was the opinion of the President & Hetherden that bark was not injurious in any period or in any stage of the Complaint -

Nature of the Epidemic - This differs in different seasons thus at one season it will be of an inflammatory type at another not by or even typhoid. In the one case we resort after two or three paroxysms in the other much earlier to some Remedies -

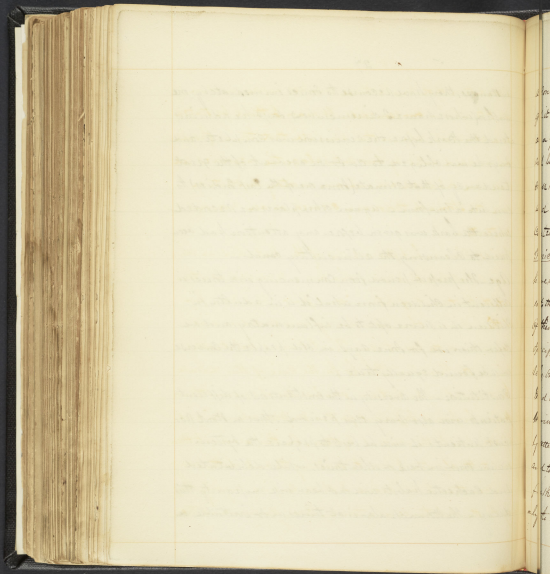
Climate - In hot climates it is for the most part more malignant and rapid in its progress - so much so some writers on tropical climates assert that in some



instances they have recourse to emetics immediately, one author (whose name I disremember) says he administered the Bark before the remission was complete, and says he was obliged to do so on account of the great tendency of that climate (viz one of the East Indies) to run into a low form - again other places are recorded where the bark was given before any attention had been paid to cleansing the alimentary canal -

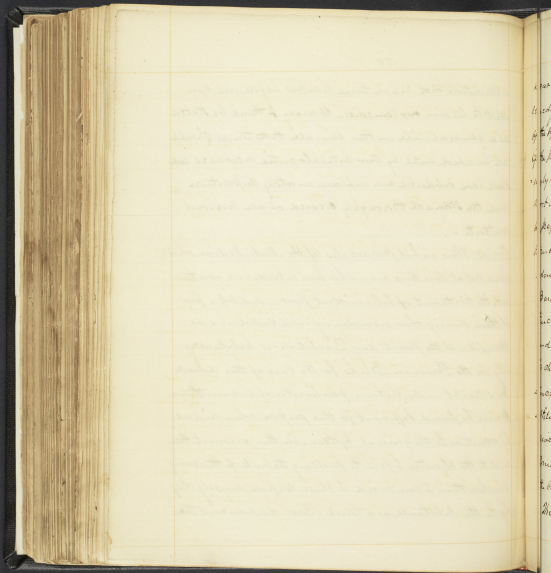
Age - The proper period for commencing with tonics is different in children from what it is in adults in children it is more apt to be inflammatory, and we defer their use for some days in old people the converse will be found equally true -

Constitution - The diversity in the constitutions of different patients will also vary this period - thus in stout robust patients it will be best to prepare the system as we pour in bark or other tonics, while debilitated and cachectic habits will not bear with impunity this delay - The stomach also is at times in so irritable a



a condition that much time escapes before we can get it to retain our remedies. It may I think be stated as a general rule in this climate that tonics should not be used until by our antiphlogistic measures we shall have subdued all inflammatory disposition and the stomach thoroughly cleared of all noxious contents -

Tonics: There are but few articles of the Mat-Medica which have not at some time or another been introduced as a tonic into the treatment of Intermittent fever - And not a few of them during their ascendancy were considered as Specifics - at the present day Practitioners habitually rely on the Peruvian Barks for the cure of this disease and except under certain peculiarities of circumstances I think be found sufficient for this purpose when aided by attention to the general system - On this account then and to the objection I feel to dwelling the bulk of this essay further than I can avoid I shall confine myself chiefly to this substance as a tonic. Cases do now and then



occurs however, where it will be necessary to change the
remedy, and resort to some other until the susceptibility
of the system is again awakened to the bark. Several
of the preparations of the bark are now made to exceed-
ingly heat and to be concentrated as scarcely to offend the
most delicate stomach and on this account only are to
be preferred to the bark in substance, which when the
stomach will bear it is the most efficacious mode of
administration -

Bark may be given in substance infusion decoction
tincture &c in various extracts sulphate of Quinine &c
and in long continued Cases it will be advantageous
to change from one to the other to prevent the influ-
ence of habit, or so as to lay it aside for a time sub-
stituting some other tonic as Sassafras virginiana
given in the same shape as we do the Bark - a
Combination of these two articles particularly with
the Carbonate of Potash has been highly recommended
The Eupatorium Perfoliatum has long been advanc-

advantageously used in some parts of our country and is
 also resorted to in regular practice as a substitute for
 Peruvian Bark. It is certainly a valuable article, but
 from what I have seen, should be prescribed with cau-
 tion. Nothing is more common in domestic practice in
 the country than to make a decoction of it and desire
 the patient to drink as much of it as he can if the
 decoction be very strong this will at times produce
 violent vomiting, purging, and sweating &c
 many other articles both native and foreign have
 been introduced as auxiliary to, and substitutes for
 Peruvian Bark. few of them now are ever found requi-
 -site. Some astringent remedies had at one time ac-
 -quired credit in the cure of this disease, as the
 sulphate of copper, acetate of plumbic, dior, catechu alunda.
 Arsenic too has held a very high reputation,
 but from the known effects of this remedy on the
 system I suspect it has been very improperly
 placed among the tonics —

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In certain obstinate and protracted cases of this complaint especially when depending on various irregularities, producing Relapse after relapse, it will sometimes happen that this course of treatment will altogether fail as such cases have been successfully treated by mercury breaking up and destroying the morbid peculiarity of system upon which the disease now depends: even if a salivation does not effect so much it will probably place the system in such a condition that a recurrence to tonics will now finish the cure.

When such means prove abortive it has been recommended to send the patient on a long journey and by thus changing his air, food, exercise, scenes, and company to bring about a revolution of his whole system this will meet our most ardent expectation, in these cases, but unfortunately is shewn after a protracted bilious Intermittent the poor patient will be too much debilitated to comply with such advice.

